

# Transatlantic topic

## Mentoring clinical researchers

In the United States, over the past decade there has been increasing recognition of the importance of clinical research as evidenced by the birth of a new federal agency<sup>1</sup> and commitment of funds from the National Institutes of Health (NIH)<sup>2</sup> and private foundations.<sup>3</sup> I have been fortunate to mentor a number of fellows and junior faculty over the past decade, and would like to share my experiences with others.

The importance of mentoring has been acknowledged for decades. Many successful senior investigators identify early positive role models and mentors as critical to their success.<sup>4-6</sup> More recently, in a survey of over 1100 junior faculty from 24 nationally representative US medical schools, faculty with mentors reported more professional support from their institutions for teaching, research, and administrative activities.<sup>9</sup> Faculty who were mentored also had a higher perception of their research skills and an increased likelihood of being awarded research grants.

### WHAT IS A MENTOR?

Mentoring can be defined as a reciprocal relationship between an advanced career incumbent (the mentor) and a junior faculty member (the protégé) aimed at fostering the development of the junior person/protégé.<sup>10</sup> At various times the mentor serves as teacher, sponsor, advisor and model. Levinson argues that the most critical function of the mentor is to support and facilitate the realisation of a Dream—a Dream to succeed, accomplish, and leave a legacy.<sup>11</sup> The concept of mentoring is drawn from a Greek myth. Odysseus leaves to fight the Trojan war—Mentor, his friend, is left behind to guide the journey of Telemachus, Odysseus's son, from youth to manhood.

Mentoring is often divided into two categories: research and career.<sup>8, 12-14</sup> It is important to distinguish between research and career mentoring because they differ in: (1) goals; (2) skills; and (3) the fundamental relationship between mentor and mentee. The goal of the *research mentor* is to develop the research career of the mentee. This involves the acquisition of research skills, selecting and conducting research projects, presenting research findings at national meetings, ensuring the completion and submission of manuscripts, assisting in networking and finally, teaching the mentee how to obtain

extramural funding. This contrasts with the *career mentor* who focuses on more global aspects of an academic career, including balancing family demands and work, career promotion, juggling the different aspects of academic life (teaching, administration, clinical care, and research) and major career decisions, such as changing institutions or research direction. Different skills are needed for each type of mentor. Commonly, career mentors have accumulated years of experience and wisdom in academia. This may not be true for research mentors, who may be well versed in epidemiology, biostatistics and other research methods, but lack comparable years of experience in academic medicine.

Although, many mentors are often involved in both aspects of providing support and guidance, fellows and junior faculty should understand the difference between these two types of mentors.

The research mentor-mentee relationship can also be divided into two categories—informal and formal. Informal mentors are important, but for various reasons, the relationship lacks the intensity and commitment that is necessary to ensure that the mentee has a successful research *career*. I often help faculty with grant applications and questions related to questionnaire or study design, serving as a project-specific mentor. In addition, I also review abstracts and manuscripts for fellows and faculty prior to submission. These tasks are important, but do not represent formal mentoring. My commitment is to a fellow or faculty member for individual projects, but not to their research careers.

### RESPONSIBILITIES OF THE MENTOR

#### The relationship between mentor and mentee

A formal mentor-mentee research relationship engenders commitments from both individuals, and an agreement to certain basic principals.<sup>14</sup> The responsibilities of the mentor include: (1) being available; (2) acting as an advocate for the mentee; (3) insisting on completion of project(s); (4) assisting with networking; and (5) seeking extramural funding.

Undoubtedly, the single most important ingredient in the mentor-mentee relationship is a sufficient ongoing time commitment from the mentor. Effective mentoring requires formal, scheduled

meetings and informal discussions. I am aware of too many fellows who have needed to wait months until their mentor is available. Since many aspects of academic life can consume long periods of time, such as submissions of grants and papers, in order to ensure that the career of a mentee progresses at a reasonable pace, the mentor must be available on a regular basis. Initially, formal meetings should be conducted regularly as mutually agreed upon by both individuals. During these meetings, interruptions must be kept to a minimum. In addition to formal meetings, informal interchange is also important. Often, between scheduled appointments, faculty have quick, but important questions that can hold up progress on studies, or grant applications. I recall fondly when one of my initial research mentors, when I was preparing for my first presentation at a national research meeting said, "I know you'll be in this weekend to finish up your presentation and practice—when can I come in to help?" Informal conversations often represent teachable moments and they may leave lasting impressions. It is important for mentors to be available on both a formal as well as informal basis.

#### Finding time for research

For the generalist clinical researcher there is constant tension between the proportion of protected time for research and clinical and other responsibilities. This is true at virtually every level of academia, but is most pronounced for junior faculty. My experience suggests that protected time varies between 30 and 70%. Although there is no magic percentage which ensures success, I believe it is best if mentors ensure that junior faculty have 50–70% protected time for a number of years. Equally as important is for the mentor to protect the mentee from other responsibilities. For example, 50% protected time may be sufficient if it is guaranteed for three to five years, is consistent from year to year, and the faculty member does not become overburdened with administrative and teaching responsibilities. Obviously, as faculty mature, there are often other responsibilities that are added to their work life. The mentor must assure that if this occurs, there is some reduction in clinical work.

#### Completing projects

It is not uncommon for faculty and fellows to let studies linger, unnecessarily prolonging or never completing

projects. A study may be submitted as an abstract, and even presented at a national meeting, but the final paper is never prepared and submitted for publication. This is often the case with individuals who are transitioning from fellowship to faculty. Since they are often changing institutions, no one takes responsibility for ensuring that they complete their recent work. Abstracts are nice accomplishments, but peer-reviewed publications and extramural funding are far more important. It is difficult to acquire extramural funding without some record of productivity. When new junior faculty first join our Division, I often focus their efforts on completing papers begun during their fellowship. Then we discuss and establish a time line for completing preliminary research projects, new manuscripts, and grant submissions. My experience with faculty is that most are very responsive to mutually agreed upon timetables.

### Networking

A great deal of success in academics is related to networking. Meeting faculty from other institutions, and representatives from foundations, industry, and governmental agencies, can help jump start an academic career. Networking also involves the mentor identifying individuals who can help the mentee with specific questions. Although I am the mentor for a number of junior faculty and fellows, it is not possible for me to have expertise in all areas in which they need help. Mentors have a responsibility in helping mentees begin to network. Reviewing which meetings to attend, and whom to call or write for help or guidance, is also part of this process.

### Funding issues

The mentor must be proactive in helping the mentee seek extramural funding. In a time of shrinking resources and greater accountability, few divisions or departments can protect junior faculty from clinical and other responsibilities for prolonged periods of time. New faculty often receive a commitment from an institution for some period of protected time. At the end of that time period, there is an expectation that extramural funding will have been obtained. Since obtaining extramural funding can often take two to three years, it is critical that the mentor discusses this issue early in the career of a faculty member. Few junior faculty realise that most governmental grants are not approved and funded on the first submission. It often takes two years from the time a grant is first submitted, then revised and resubmitted, and funding actually begins.

### Success or failure as a researcher

The most difficult aspect of mentoring occurs when a mentor believes that a

mentee is not going to succeed as a researcher. This often occurs after a two to three year relationship when progress with a research project, either in collecting or analysing data, or writing and submitting a manuscript for publication, slows to a snails pace. When this has occurred in my relationships with fellows or faculty, I have found that they are remarkably relieved when the issue of their future is discussed. Many faculty know when they are not succeeding and need to focus on a different career track.

### RESPONSIBILITIES OF THE MENTEE

The mentee also has certain responsibilities in this dyadic relationship. First and foremost, the mentee must hold the mentor accountable for various details of the relationship: time commitment; reading manuscripts and grants in a timely fashion; etc. This can be difficult, since the mentee is dependent on the mentor. Second, the mentee must seek out and be willing to hear criticism. It is difficult to achieve success in the academic world. Individuals must be prepared to discuss how they can improve themselves. Third, the mentee must commit appropriate time and effort to analyse data and complete and submit manuscripts for publication. I believe that most successful faculty work as hard today as in the past. The obvious changes in society—dual careers and many men playing a greater role in the lives of their children—have made life far more complicated for junior faculty. However, building a successful academic career requires hard work, a great deal of time, and sacrifices. Finally, mentees should also foster relationships with more than one mentor in order to gain various perspectives. Many of my colleagues use senior faculty from other institutions or outside of their own division as career mentors. I continue to consult colleagues about important research and career questions at other institutions.

### Dilemmas in the mentor-mentee relationship

There are a number of possible conflicts that may occur in the mentor-mentee relationship.<sup>11</sup> I have already discussed the issue of availability. Despite the best of intentions, the mentor's availability can diminish as they become busier in their own careers. The mentee must hold the mentor accountable for time commitments. Second, mentors must attend to their own careers. This can be a source of conflict with junior faculty. This conflict is often hidden, and rarely discussed. Mentors must avoid inappropriate authorship and fostering their own careers at the expense of mentees.

Mentors sometimes ask junior colleagues to co-author review articles or chapters in books. This can be quite time consuming and distracting from progress towards independent, extramural funding. Mature individuals must be willing to discuss possible conflicts. Third, relationships need to mature. The goal for the mentor is to support individuals as they become independent investigators. Often, as the relationship matures it is difficult for the mentor to allow this to occur. The mentor and the mentee must be aware of the need for the relationship to change with time. The later two points represent the most interpersonally complex components of the mentor-mentee relationship.<sup>11</sup> *Good mentors champion the careers of people they are helping.* Fourth, the mentor must hold the mentee responsible. The mentor must develop a feel for how a particular junior faculty member responds best to direction. For some, encouragement is the most effective tactic, for others, criticism is helpful. My experience suggests that a mix of carefully timed encouragement and constructive criticism works best. Regardless, the mentor must document, in writing, on a regular basis, ways in which the junior faculty member is succeeding and ways in which they must improve. Finally, as mentioned above, junior faculty often confuse research productivity—papers, review articles, talks, book chapters—with the ability to sustain academic success. It is critical that faculty understand that in order to ensure continued academic success, peer review papers represent a first step in a clinical research career. In an environment of limited resources, only extramural funding will guarantee ongoing success.

### FINDING A MENTOR

Identifying appropriate mentors can be a frustrating task. First, individuals seeking mentors need to understand what they are searching for.<sup>12-14</sup> They need a certain level of self-awareness. I have already mentioned that there are different types of mentors—career, research, project-specific. I often help colleagues articulate what type of person they need. Second, the search for a mentor should not be restricted to one's own division, department, or even institution. Although it is almost always more difficult to have mentors that are in different places, the relationship can still work. In the case of career mentors, often individuals from other institutions will have a perspective that is not available from faculty at one's own place. Third, prior to selecting a mentor, the mentee should meet and discuss goals and expectations. They may also want to talk with other junior faculty who have worked with

that individual in a mentor-mentee relationship. Finally, junior faculty need to recognise that sometimes, despite the best of intentions, the relationship is not working, and they need to change mentors.

## CONCLUSION

This overview of mentoring is not meant to be exhaustive, but rather a starting point. I am sure that there are other clinical research mentors in pediatrics who could add to my list of important aspects of the mentor-mentee relationship. Some may even disagree with the paradigms I have discussed. However, we need more clarity and activism around the mentor-mentee relationship in order to ensure success.

I am delighted that there is growing interest and resources for clinical and health services research. The cadre of young and mid-career investigators in this area is increasing. We must provide the same ongoing support and environment for clinical researchers that has been available for basic scientists—time, commitment, resources, and mentors.

## ACKNOWLEDGEMENT

I have been extraordinarily fortunate to have been well mentored in my career. My mentors at Yale, Paul McCarthy, John Leventhal, and Gene Shapiro and my mentors at Boston University School of Medicine/Boston Medical Center (formerly Boston City Hospital), Joel Alpert, Jerry Klein, and Barry Zuckerman, have been critical in what ever success I can claim. I would also like to acknowledge two other individuals who have taught me a great deal about mentoring—Paul Wise and Stephen Pelton.

I have been fortunate to help many fellows and faculty in their career development—I thank them for the opportunity to assist them—it is one of the most rewarding aspects of my academic life.

Supported in part with grants from the Bureau of Health Professions (Institutional National Research Service Award and Faculty Development Program).

Howard Bauchner  
US Editor

## REFERENCES

1. <http://www.ahcpr.gov/>
2. <http://www.nih.gov/grants/GeneralistPhysicianFacultyScholarsProgram>. 1999.
3. The Robert Wood Johnson Foundation, Princeton, New Jersey.
4. Barondess JA. Mentoring in biomedicine. *J Lab Clin Med* 1997;**129**:487–91.
5. Bland CJ, Schmitz CC. Characteristics of the successful researcher and implications for faculty development. *J Med Educ* 1986;**61**:22–31.
6. Rogers JC, Holloway RL, Miller SM. Academic mentoring and family medicine's research productivity. *Fam Med* 1990;**22**:186–90.
7. Barondess JA. On mentoring. *Journal of the Royal Society of Medicine* 1997;**90**:347–9.
8. Applegate WB. Career development in academic medicine. *American Journal of Medicine*. 1990;**88**:263–7.
9. Palepu A, Friedman RH, Barnett RC, et al. Junior faculty members mentoring relationships and their professional development in U.S. medical schools. *Acad Med* 1998;**73**:318–23.
10. Healy CC, Welchert AJ. Mentoring relations: a definition to advance research and practice. *Educational Research* 1990;**19**:17–21.
11. Levenson DJ. The seasons of a man's life. New York: Ballantine Books, 1978.
12. Goldman L. Blueprint for a research career in general internal medicine. *J Gen Intern Med* 1991;**6**:341–4.
13. Schapira MM, Kalet A, Schwartz MD, et al. Mentorship in general internal medicine: investment in our future. *J Gen Intern Med* 1992;**7**:248–51.
14. Chin MH, Covinsky KE, McDermott MM, et al. Building a research career in general internal medicine. *J Gen Intern Med* 1998;**13**:117–22.